

1 **WHAT IS CLAIMED IS:**

2 1. A method for making controlled-release ammonium phosphate
3 fertilizer comprising following acts:

4 adding release-controlling materials into ammonium phosphate
5 slurry;

6 mixing evenly the ammonium phosphate slurry and the release-
7 controlling materials into a mixture;

8 condensing the mixture of the ammonium phosphate slurry and the
9 release-controlling materials until a water-content rate of the mixture reaches
10 25~35% (w/w, based on a dry weight of the ammonium phosphate slurry);

11 and

12 granulating the condensed mixture of the ammonium phosphate
13 slurry and the release-controlling materials to obtain granular controlled-
14 release ammonium phosphate fertilizer.

15 2. The method as claimed in claim 1, wherein sulfuric acid is further
16 added to the mixture of the ammonium phosphate and the release-controlling
17 material to acidify the mixture before condensing;

18 wherein the sulfuric acid is 1~20% (w/w, based on the dry weight of
19 the ammonium phosphate slurry).

20 3. The method as claimed in claim 1, wherein the release-controlling
21 material is selected from at least one of the group comprising: zeolite,
22 montmorillonite, pillared montmorillonite, and lignin comprising alkali
23 lignin and lignosulfonate or lignosulphonate.

24 4. The method as claimed in claim 2, wherein the release-controlling

1 material is selected from at least one of the group comprising: acidified
2 zeolite, acidified montmorillonite, acidified pillared montmorillonite, and
3 acidified lignin comprising acidified alkali lignin and acidified
4 lignosulfonate or lignosulphonate.

5 5. The method as claimed in claim 3, wherein the release-controlling
6 material is 3~35%(w/w, based on the dry weight of the ammonium
7 phosphate slurry).

8 6. The method as claimed in claim 4, wherein the release-controlling
9 material is 3~35%(w/w, based on the dry weight of the ammonium
10 phosphate slurry).

11 7. The method as claimed in claim 1, wherein the granulating
12 methods are selected from the following methods comprising: slurry
13 granulating, spray granulating, and fluidization granulating.

14 8. The method as claimed in claim 5, wherein the granulating
15 methods are selected from following methods comprising: slurry granulating,
16 spray granulating, and fluidization granulating.

17 9. The method as claimed in claim 6, wherein the granulating
18 methods are selected from following methods comprising: slurry granulating,
19 spray granulating, and fluidization granulating.

20 10. A method for making controlled-release ammonium phosphate
21 fertilizer comprising following acts:

22 adding release-controlling material and water into ammonium
23 phosphate powder;

24 mixing evenly the ammonium phosphate powder, the release-

1 controlling material and water into a mixture;

2 grinding the mixture;

3 activating the components in the mixture by piling;

4 drying the activated mixture to achieve the controlled-release

5 ammonium phosphate fertilizer.

6 11. The method as claimed in claim 10, wherein sulfuric acid is
7 further added into the mixture of the ammonium phosphate and the release-
8 controlling material to acidify the mixture before grinding act;

9 wherein the sulfuric acid is 1~20% (w/w, based on a weight of the
10 ammonium phosphate powder).

11 12. The method as claimed in claim 10, wherein the release-
12 controlling material is selected from at least one of the group comprising:
13 zeolite, montmorillonite, pillared montmorillonite, and lignin comprising
14 alkali lignin and lignosulfonate or lignosulphonate

15 13. The method as claimed in claim 10, wherein the release-
16 controlling material is selected from at least one of the group comprising:
17 acidified zeolite, acidified montmorillonite, acidified pillared
18 montmorillonite, and acidified lignin comprising acidified alkali lignin and
19 acidified lignosulfonate or lignosulphonate .

20 14. The method as claimed in claim 12, wherein the release-
21 controlling materials are in proportion of 3~35% (w/w, based on a weight of
22 the ammonium phosphate powder) and the water is in proportion of 3~40%
23 (w/w, based on the weight of the ammonium phosphate powder).

24 15. The method as claimed in claim 13, wherein the release-

- 1 controlling materials are in proportion of 3~35% (w/w, based on a weight of
- 2 the ammonium phosphate powder) and the water is in proportion of 3~40%
- 3 (w/w, based on the weight of the ammonium phosphate powder).